

ABSTRACT

The present invention relates to the field of ultrasonic devices. More particularly the invention is related to the use of ultrasonic emitters, receivers, and reflectors for the precise alignment of parts of an endoscope relative to each other. The methods for determining the relative position of two parts of the endoscope are based on measuring the distance between them based on the use of one or more transducers or arrays of transducers functioning as transmitters of ultrasonic signals and one or more transducers or arrays of transducers functioning as receivers of the ultrasonic signals. In preferred embodiments of the invention, at least one of the receivers is replaced by a reflector and at least one of the transmitters also functions as a receiver.

FOOTNOTES